Space Weather Forecast

Issued on Thursday, 18 January 2024 at 00:26 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Chance of isolated Moderate-class X-ray flares.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Low with only minor Common-class flares. There are now twelve sunspot regions on the visible disc, with two regions in the southwest both in the process of rotating off the west limb and no longer properly visible. A further region is also close to the southwest limb and is therefore difficult to assess, but has only emerged recently. A new region on the northeast limb is now showing a trailer spot. The trailer spot in a region in the northeast appears to have developed some weak magnetic complexity. A nearby region has also developed a weak reverse polarity spot to the southwest of the main spot.
No Earth-directed Coronal Mass Ejections (CMEs) were observed.

Solar Wind / Geomagnetic Activity: Solar winds were at background to slightly elevated levels, although there is some uncertainty in the values from one of the satellites observing the solar winds. Wind speeds appeared to ease from around 430 km/s to near 300 km/s. The interplanetary magnetic field (IMF) has been weak throughout. The north-south component was weak but mainly negative (southward directed). Geomagnetic activity was Quiet (Kp 0-1).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) was at background levels, with no solar radiation storms observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Low activity is expected, but with a chance of isolated Moderate-class activity.

Solar Wind / Geomagnetic Activity: There are no Earth-directed CMEs currently expected. The current slow wind conditions may transition to a weak coronal hole fast wind during Day 1 (18 Jan). Slightly elevated speeds of 400-450km/s are possible briefly, likely easing through Day 2 (19 Jan). Then a further fast wind enhancement, and return of slightly elevated speeds, is possible on Day 3 (20 Jan).
Geomagnetic activity is expected to be largely Quiet, however any fast winds will likely bring a spell of Unsettled intervals with a chance of Active, mainly on Day 1 and again on Day 3.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is forecast to be at background levels, with only a very slight chance of solar radiation storms occurring.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.

Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	5	1	5	1
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	30	35	35	40
Very Active	R3 to R5 X	No	2	2	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	5	5	5	5
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2024. All Rights Reserved.